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Europäisches  
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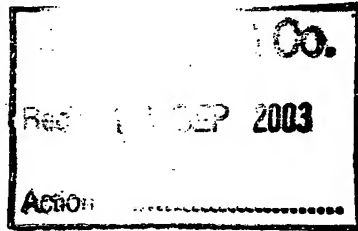
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Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

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Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

ASML Netherlands B.V.

## COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☐ abstract

☒ title

☒ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract:

2

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 609 (P-1828), 18 November 1994 (1994-11-18) -& JP 06 230194 A (NIPPON TELEGR & TELEPH CORP), 19 August 1994 (1994-08-19) * abstract * * figure 7 * ---	1-8,11, 12	G03F7/20
X	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 05, 31 May 1996 (1996-05-31) -& JP 08 005795 A (JAPAN AVIATION ELECTRON IND LTD), 12 January 1996 (1996-01-12) * abstract * * figures *	1,2,5-8, 11,12	
X	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 08, 30 June 1999 (1999-06-30) -& JP 11 084093 A (JAPAN AVIATION ELECTRON IND LTD), 26 March 1999 (1999-03-26) * abstract * * figures *	1,2,5-8, 11,12	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 627 (P-1834), 29 November 1994 (1994-11-29) -& JP 06 242297 A (NIPPON TELEGR & TELEPH CORP), 2 September 1994 (1994-09-02) * abstract * * figures * --- -/--	1,7,12	G03F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 August 2003	Examiner Aguilar, M.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	DATABASE WPI Section Ch, Week 200057 Derwent Publications Ltd., London, GB; Class A60, AN 2000-601004 XP002252810 & SG 72 598 A (UNIV SINGAPORE NAT), 23 May 2000 (2000-05-23) * abstract *	1,12	
A	US 2002/086553 A1 (CHANG CHRISTOPHER C ET AL) 4 July 2002 (2002-07-04) * the whole document *	1,12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 August 2003	Examiner Aguilar, M.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 02 25 7568

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 06230194	A	19-08-1994	NONE	
JP 08005795	A	12-01-1996	NONE	
JP 11084093	A	26-03-1999	NONE	
JP 06242297	A	02-09-1994	JP 3135733 B2	19-02-2001
SG 72598	A	23-05-2000	SG 72598 A1	23-05-2000
US 2002086553	A1	04-07-2002	WO 02053797 A1	11-07-2002



## ABSTRACT / ZUSAMMENFASSUNG / ABREGE

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Optical elements such as multi-layer mirrors for EUV lithography machines are provided, the optical elements having at least one layer (4) containing one or more Buckminsterfullerenes. Typically the fullerenes are present as a capping layer (4), which is either provided as the outer capping layer of the optical element or forms a sub-capping layer which is adjacent to an outer capping layer formed of a different material. The fullerene containing layer(s) may alternatively or additionally be present as an interlayer between two layers of a multi-layer mirror.